Cost of station-based energy storage systems in India

Overview

Tariffs for Battery Energy Storage Systems discovered through competitive bidding in 2022-23 were about ₹10. Recent bids show the cost has fallen to about ₹2. As the country rapidly scales up variable renewable energy (VRE), Standalone ESS offers a dispatchable solution to address the intermittency of renewables, su andalone ESS functions as an independent asset. Utilities, grid operators or third-party. This analysis has been shared with various forums and agencies in India, including the Ministry of Power, the Ministry of New and Renewable Energy, the National Thermal Power Corporation Limited, the Central Electricity Authority, the Solar Energy Corporation of India, and the Central Electricity. India has set a target to achieve 50% cumulative installed capacity from non-fossil fuel-based energy resources by 2030 and has pledged to reduce the emission intensity of its GDP by 45% by 2030, based on 2005 levels. 4 GW as of December 2024, With solar energy contributing 47% of the capacity, followed by wind energy (23%) & Large hydro Projects (22%), and the rest being generated through Bio Power (5% d to grid. Falling battery storage costs and the accelerating growth of renewable energies are key to India's strategy of achieving carbon neutrality by 2070, reveals an analysis by Ember and The Energy and Resources Institute.

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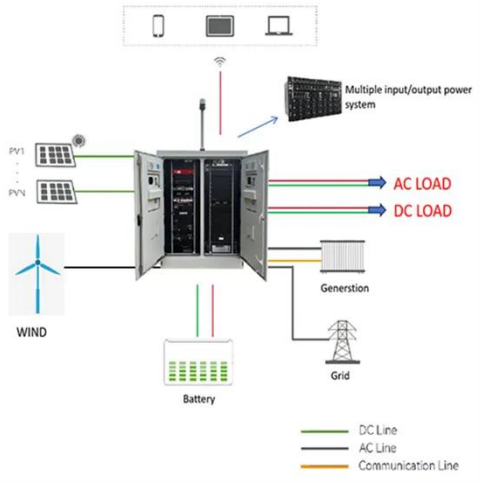

Storage costs and renewable energies: critical levers for India

The effectiveness of this transition hinges on two key aspects: reducing the cost of energy storage systems and rapidly increasing renewable energy production capacity, particularly solar power.

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LEVELISED COST OF BEHIND-THE-METER STORAGE IN INDIA

Figure ES.1: Current levelised cost of solar plus energy storage for the Small Non-Residential user case, for different amounts of solar energy owing through the battery.

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Figure 1. Recent & projected costs of key grid

aintaining its position as the cheapest form - in terms of $/kWh - of grid-scale energy storage. Of all countries here compared, costs are cheapest in India, which already hosts a large instal.

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The Standalone Energy Storage Market in India 1

Standalone Energy Storage Systems (ESS) are rapidly emerging as a key market, with 6.1 gigawatts of tenders issued in the first quarter of 2025 alone, accounting for 64% of the total utility-scale energy ...

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REPORT ON ENERGY STORAGE SYSTEMS

Standalone BESS tenders are the primary mechanism for enhancing the capacity credit of existing VRE systems integrated with the grid. Following an initial period of aggressive bidding by new market ...

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Development of stationary battery storage systems in India

Intermediate-year growth rates are weighted by India's awarded-capacity pipeline and adjusted using technology-learning expectations from international cost assessments.

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STRATEGIC PATHWAYS FOR ENERGY STORAGE IN INDIA ...

In this context, the dramatic decline in energy storage costs--marked by a nearly 90% reduction in global storage prices over the last decade and recent energy storage auctions in India reflecting a ...

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Battery Energy Storage Systems

The BESS market in India is on the cusp of unprecedented growth, driven by the country's ambitious renewable energy goals and the critical need for grid stabilisation.

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